UTILIZING THE JIGSAW TECHNIQUE TO HELP STUDENTS OVERCOME COMMON GRAMMATICAL ERRORS IN WRITING

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Abstract: *Writing remains a challenge for English as a Foreign Language (EFL) learners worldwide, particularly for Vietnamese learners. One approach that has shown promise in improving writing skills is cooperative learning, which has been widely recognized for its effectiveness in writing instruction. However, despite its benefits, little research has specifically examined how the Jigsaw technique — a well-known cooperative learning strategy — impacts grammar issues in EFL writing. Therefore, to evaluate the effects of the proposed strategy, eighty-two English majors from two Writing 1 classes were chosen, with one class designated as experimental group and the other as control group. Both groups initially performed a pre-test to assess their equivalence, after which the experimental group received an innovative strategy called the Jigsaw technique, and the control group was taught using traditional instruction. After the two-week treatment, both groups underwent a post-test. The results indicated a notable reduction in grammatical errors and a positive engagement among students in the experimental group compared to those in the control group. Therefore, this not only demonstrates the beneficial influence of the Jigsaw technique in assisting EFL learners in overcoming ordinary grammatical mistakes in writing, but it also contributes to improving their participation. Furthermore, our study, carried out at the tertiary level, focuses on the innovation of teaching writing. As a result, the optimistic findings encourage instructors and practitioners to confidently apply the Jigsaw technique in the educational setting to enhance learners' writing performance.*

Keywords: *jigsaw technique, grammatical errors, writing skill, cooperative learning*

INTRODUCTION

It is irrefutable that English is instrumental in various fields worldwide, particularly in Vietnam. One of the vital language skills students need to master is writing, a process of conveying thoughts and ideas because good writing skills could help students effectively express their opinions and contribute to greater success (Ngo & Truong, 2023). Due to its importance, writing is a compulsory subject that must be mastered in the education and future careers of English-majored learners at university. Nevertheless, it remains a challenge for English as a Foreign Language (EFL) learners (Nguyen, 2021; Ngo & Truong, 2023; Yusuf et al., 2019) since learning to write involves explicitly acquiring the mechanics, correct usage, and standard features of academic writing (Kwak, 2017). Moreover, in English language teaching (ELT) classrooms, Alanazi is in line with Nguyen (2021) that regardless of one's initial language, writing is perceived as a challenging task. The author (Alanazi, 2017) also adds that becoming a competent writer involves making and recognizing mistakes and errors.

When it comes to writing, EFL learners usually face many grammatical obstacles, and their inability to write well is often due to the influence of their mother tongue and insufficient knowledge of grammar rules and concepts (Singh et al., 2017). According to Sadiah and Royani (2019), common errors in writing are verb agreement, pronoun, usage, sentence pattern, spelling, capitalization. Moreover, Tran and Nguyen (2023) indicated that EFL learners encountered five essay writing difficulties, including time, motivation, grammar, organization, and vocabulary. In the research, the authors illustrated that students' writing difficulties predominantly stem from a lack of vocabulary (84.6%) and grammatical issues (61.5%). Furthermore, Singh et al. (2017) identified nine frequent errors EFL students made, namely subject-verb agreement, verb tense, noun, preposition, adjective, article, pronoun, adverbs, and conjunctions. The findings suggest that educators should modify their teaching methods to address students' writing errors and

needs. Incorporating grammar terms naturally into editing, revising, and proofreading processes could benefit students, enabling them to comprehend and apply grammar more effectively. Last but not least, based on the authors' official observations at their university in 2024, freshmen English majors commit similar widespread writing faults, including tenses, subject-verb agreement, punctuation, capitalization, articles, and prepositions even after years of education from primary to high school. Therefore, as instructors, we need to consider a practical approach to deal with these prevalent grammatical errors, which are also the key focus in this study.

In the realm of education, cooperative learning has been applied and documented in the literature as an effective strategy in helping students achieve better academic purposes, material proficiency, and active participation and promoting students' positive attitudes toward subjects (Johnson & Johnson, 2009; Salvin, 2011; Tran & Lewis, 2012). Importantly, the Jigsaw technique (JT) stands out among the cooperative learning strategies, encouraging student participation and mutual assistance in learning the content to achieve a mutual objective. In the jigsaw classrooms, students collaborate in small groups to master focused subjects before instructing their peers. This technique has been modified several times to meet specific teaching objectives and learners' needs. For instance, Jigsaw II was proposed by Slavin in 1978, Jigsaw III by Stahl in 1994, and Jigsaw IV was presented by Holliday in 2002 to make the learning process more effective. Despite slight differences among these types of Jigsaw, the core method remains, ensuring the activity of jigsaw groups and expert groups. Noticeably, the Jigsaw technique has been studied in numerous papers aiming to promote learners' academic achievement (Alfaruqy, 2021; Zahra, 2014), and it has proven to be suitable and supportive in the teaching-learning process (Killen, 2007; Sitohang & Purnawarman, 2015; Suwartono & Romdona, 2024). Specifically, Zahra (2014) stated that the Jigsaw technique plays a significant role in high school students' grammatical mastery and other skills, such as creative thinking and presentation. However, little

attention on how to use the Jigsaw technique to address EFL higher education learners' frequent grammar mistakes in writing has been paid in the literature. In addition, while the positive effects of the Jigsaw technique are well-documented, most studies have been implemented in developed countries and among young learners. Therefore, the researchers conducted this study to investigate the effectiveness of the Jigsaw technique in assisting university students in rectifying grammatical mistakes in writing and boosting their involvement in the classroom process. The primary contribution of this paper is to enrich the existing literature by empirically investigating the impact of JT within a Vietnamese higher education institution. It provides valuable insights into this technique in EFL writing classrooms, highlighting the gaps to be addressed.

As a result, this study addresses the following two research questions:

1. To what extent does the Jigsaw technique help students overcome their grammatical errors in writing?

2. How does the Jigsaw technique impact engagement?

METHODOLOGY

Participants

This study employed a quasi-experimental design to investigate the effectiveness of the Jigsaw strategy in reducing common grammatical errors in n terms of prior English language exposure and academic level. All participants were between 18 and 20 years old, and were enrolled in the same introductory Writing 1 course, which focused on foundational academic writing skills. One class (n=42) was designated the experimental group (EG) and received instruction using the Jigsaw technique. The other class (n=40) was the control group (CG) and received conventional teaching techniques.

Data collection instruments

The quasi-experimental research employed two instruments to collect the data. First of all, two equivalent writing tests were administered as a pre-test and post-test to assess changes in participants' writing skills. Their writings were evaluated using a rubric with five criteria: topic sentence, supporting sentences, concluding sentence, organization, and grammar. However, the researchers then analyzed the test data in two distinct ways. To begin with, they scored each paragraph based on all five rubric criteria, providing a comprehensive overview of the students' writing abilities. Secondly, they conducted a separate evaluation focused specifically on the grammar criteria of the students' writing, including tenses, subject-verb agreement, punctuation, capitalization, articles, and prepositions to isolate and examine the students' grammar independently from other aspects of their writing. Then the data from this second evaluation was used to analyze the pre-test and post-test scores for the study. By comparing pre-test and post-test scores, researchers could evaluate the effectiveness of the Jigsaw strategy in reducing learners' grammatical errors. The second instrument was a Student Attitude Questionnaire, a 10-item, close-ended survey given only to the experimental group, investigating the impact of the Jigsaw technique on student engagement in learning. The data from this questionnaire provided valuable insights into the students' experience with the Jigsaw approach and its potential benefits.

Research design

The experiment took place just over two weeks to measure the method's effectiveness. First and foremost, on April 10th, 2024, the experimental group (EG) and control group (CG) completed a 20-minute written pre-test on the topic "Friendship" from the Great Writing 1 coursebook. After collecting students' pre-tests, the researchers graded the writing independently. Scores from the two raters were averaged for statistical analysis. From April 12th to April 24th, 2024, the EG participated in a

three-meeting Jigsaw activity. In each meeting, the Jigsaw activity was carried out in three phases. Firstly, the class was divided into seven "Home groups" of six students each. These groups discussed the given writing topic, expanded their related vocabulary, and then individually drafted their paragraphs. Secondly, the students transitioned into six temporary "Expert groups" based on six assigned grammatical points, where they delved into their specific areas, practiced its application, and prepared mini-lessons for peer teaching. Finally, expert group members returned to their Home Groups to share their expertise by presenting their mini-lessons, ensuring all members understand all six grammatical points. Then during peer edition sessions, students exchanged drafts and offered targeted feedback specifically addressing their grammatical mistakes. In the end, on April 26, 2024, after the treatment, both EG and CG completed a 20-minute post-test, writing a paragraph on the topic of "Travelling", using prompts from the Great writing 1 coursebook. Following the experiment, on April 26, 2024, EG completed a questionnaire to analyze their engagement and opinion, complementing the quantitative data from the writing tests and offering a comprehensive understanding of the Jigsaw technique's impact.

DATA ANALYSIS FINDINGS

Pre-test analysis

Independent t-test

An independent t-test was conducted to examine if the means scores of both CG and EG groups were statistically different. As shown in Table 1, the statistical values for both groups were similar. Notably, the means exhibited a minimal difference of only 0.07, with a mean of 5.2976 for CG and 5.2276 for EG. Moreover, the standard deviation values further reinforced this similarity, with 1.12108 and 1.19079 for CG and EG, respectively, which suggested an approximate resemblance between the pre-test results of CG and EG, indicating that students in both groups entered the study with almost same level of grammar and writing.

Table 1: The Summarized Results of Independent t-test

	Pre-test		Post-test	
Name	**CG**	**EG**	**CG**	**EG**
Mean score	6.2857	7.0476	5.2976	5.2276
Sample Size (N)	42	42	42	42
Standard Deviation	1.03088	0.87520	1.12108	1.19079

Despite this observed correspondence, the experimenter desired to test whether this slight disparity of 0.07 could be statistically crucial, so Statistical Package for the Social Sciences (SPSS), a powerful tool for data analysis in various fields, including social sciences, market research, health sciences, and education, was utilized. It simplifies statistical analysis, making it accessible to researchers and analysts with varying statistical expertise. As a result, an independent samples t-test was carried out using SPSS software, and the findings are presented in Table 2 below.

Table 2: Independent Samples Test

Equal variances assumed Equal variances not assumed			**Pretest – CG and EG**		**Post-test– CG and EG**	
			Equal variances assumed	Equal variances not assumed		
Levene's Test for Equality of Variances	F		0.176		0.598	
	Sig.		**0.676**		**0.442**	
t-test for Equality of Means	t		0.277	0.277	-3.651	-3.651
	df		82	81.703	82	79.896
	Sig. (2-tailed)		0.782	0.782	0.000	0.000
	Mean Difference		0.0700	0.0700	-0.76190	-0.76190
	Std. Error Difference		0.2524	0.2524	0.20866	0.20866
	95% Confidence Interval of the Difference	Lower	-0.4320	-0.4321	-1.17717	-0.4321
		Upper	0.5720	0.5721	-0.34664	0.5721

As can be seen from Table 2, the statistical analysis revealed no significant differences between the two groups. Levene's test for equality of variances indicated a p-value (sig.) of 0.676, which was greater than the commonly used significance level of alpha (α) set at 0.05, suggesting no statistically substantial difference in the variances of two groups. In addition, the t-test, with a two-tailed significance level (sig.) of 0.782, also surpassed the alpha of 0.05. These results lead to the accepting the null hypothesis (Ho), implying that there is no statistically drastic distinction in the means of the two groups.

Post-test analysis

After a three-session treatment period using Jigsaw technique to tackle students' grammar problems, researchers analyzed post-test scores to determine improvement in their grammatical accuracy in their writing. The following table presents a statistical analysis of the post-test data, revealing whether the JT treatment significantly changed final grammar scores or not.

Post-test scores

The data indicated a marked distinction between the two groups' performance. The experimental group achieved better results, which means they made much lesser grammatical errors than the control group did. This difference is substantiated by the means, with the control group scoring 6.2857 and the experimental group achieving 7.0476. To statistically assess the significance of this 0.7619 disparity between the means, an independent samples t-test was conducted using SPSS software. The following table presents the outcomes of this test.

Post-test statistical testing

Table 2 revealed significant differences between the two groups' performance. Levene's test for equal variances confirmed that the variances in both groups were statistically similar (sig. = 0.442 > α = 0.05). Consequently, a test assuming equal variances was appropriate

to assess the significance of the mean difference. This test showed a statistically significant difference between the groups (sig. (2-tailed) = 0.000 < α = 0.05), which suggests that the proposed Jigsaw technique led to a substantial reduction in grammatical errors in students' writing in EG. The statistically notable distinction in Means indicated that participants in the experimental group made greater progress in mastering grammatical points after the treatment.

Questionnaire analysis

This study examines student experiences with the Jigsaw technique using a questionnaire focused on four key areas (Table 3): classroom engagement, collaboration and mutual assistance, academic achievement, and overall opinion of the technique. The author investigates how Jigsaw influences student engagement and academic success by exploring these aspects.

Table 3: Student Engagement in the Writing 1 Classroom

Aspect		Statements	Strongly agree	Agree	Disagree	Strongly disagree
Student engagement in the classroom	1	During Jigsaw activities, I found myself paying close attention to what my classmates were explaining.	27	15	0	0
	2	I felt motivated to learn my assigned topic in the Jigsaw group because I knew I would be teaching it to others.	10	32	0	0
	3	Working in a Jigsaw group made the learning process more interesting and engaging for me.	17	20	5	0
	4	I'm keen to participate in Jigsaw activities in class.	24	12	6	0

First and foremost, related to student engagement, the findings illustrated a positive outcome after Jigsaw technique was utilized in writing activities, shown in Table 3. Specifically, all students agreed they paid close attention to their classmates' explanations and felt motivated to learn their assigned topic because they had to teach it later. Similarly, the majority of EG participants (92.5%) found the learning process more interesting and engaging while working in Jigsaw groups, with only 7.5% disagreeing. Moreover, only a small percentage of students (15%) of students did not feel enthusiastic about participating in Jigsaw activities.

Secondly, the questionnaire investigated if Jigsaw technique fostered collaborative learning. The data revealed a positive response, with all students (100%) agreeing that Jigsaw technique creates opportunities for team members to share information. However, regarding communication skill improvement, the results were mixed. While a vast majority (92.5%) believed Jigsaw helped them communicate better, just 12.5 % of students disagreed.

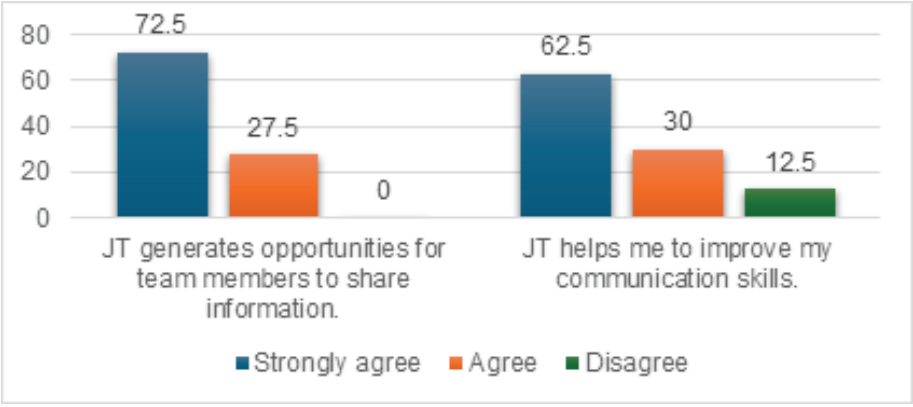

Figure 1: Encouraging Cooperative Learning

The survey included two questions to gain student insights on how the Jigsaw technique impacts their learning. The chart below shows student perspectives on how the Jigsaw technique promotes their academic achievement.

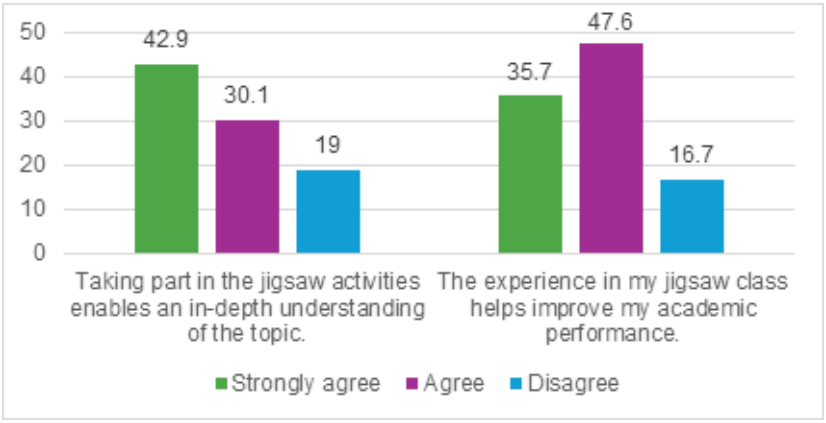

Figure 2: Perspectives on Promoting Learners' Academic Achievement

The majority of students (80.1%) felt that participating in Jigsaw activities led to a deeper understanding of the topic and improved their academic performance (83.3%). However, a significant minority, 19%, did not perceive an in-depth understanding of the topic, and 16.7% did not report improvement in their academic achievement.

Finally, the students' overall opinion of the Jigsaw technique in writing is illustrated in the following chart. A considerable majority, 90%, acknowledged the effectiveness of the Jigsaw technique in reducing grammatical errors in their writing. Despite this positive reception, nearly half of the students (47%) reported difficulties in adapting the Jigsaw technique to their learning processes.

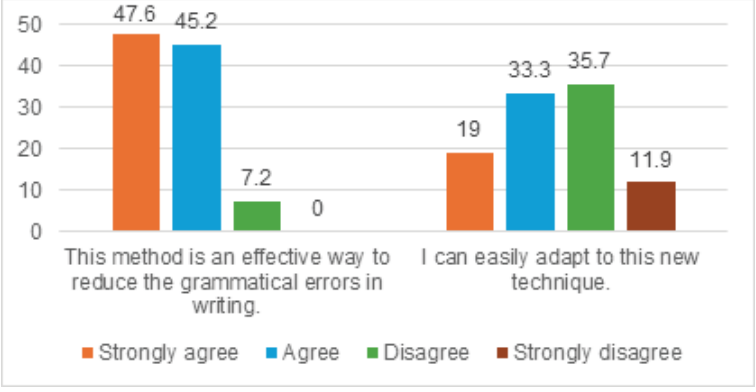

Figure 3: Students' Overall Opinion about Jigsaw Technique

DISCUSSION AND IMPLICATION

The present study aims to examine the Jigsaw technique's efficacy on students' grammar and its impact on student engagement. This discussion refers to the results obtained in the findings section after implementing the jigsaw technique in Writing 1 class among first-year English majors to enhance their learning outcomes. The study involved the selection of two groups with a similar baseline level, as determined by pre-test results before the treatment. One group was then exposed to the Jigsaw technique to investigate the proposed research questions.

The pre-test and post-test analyses revealed a notable impact of the Jigsaw technique on the experimental group (EG) after the treatment. In the pre-test comparison, the mean scores for CG (5.2976) and EG (5.2276) were very similar, with a slight mean difference of 0.07. Standard deviations were also close (CG: 1.12108, EG: 1.19079), indicating similar variability within both groups. Furthermore, an independent t-test confirmed no statistically dramatic difference between the two groups (Sig. = 0.782 > α = 0.05). In contrast, the post-test findings showed a considerable mean difference of 0.7619 in favor of EG (CG: 6.2857, EG: 7.0476), with standard deviations demonstrating less variability in EG (CG: 1.03088, EG: 0.87520). The t-test results revealed a statistically significant difference between the groups (Sig. = 0.000 < α = 0.05).

The evaluation of the data suggested that the Jigsaw technique significantly reduced grammatical mistakes in the experimental group's writing compared to that of the control group. The similarity in pre-test scores between CG and EG denoted that both groups started with comparable levels of grammar proficiency, which supported the validity of subsequent comparisons. The significant improvement in the EG post-test scores indicated JT's effectiveness in helping students overcome grammatical errors in writing. Specifically, the statistical significance (Sig. = 0.000) in the post-test results underscored the efficacy of the JT treatment. In fact, the experimental group showed enhancement in all

six key grammar aspects (tenses, subject-verb agreement, punctuation, capitalization, articles, and prepositions) due to the appealing features of the JT. In a Jigsaw classroom, having shared the responsibility and teaching points, the students took all the risks and successfully dealt with the subject, so participating actively in learning created a more fruitful learning environment. Similar results were reflected in studies by Al-Salkhi (2015), and Azmin (2016), who confirmed the effectiveness of using the Jigsaw cooperative learning method in improving students' language learning.

Regarding the second research question, the findings showed that most participants were engaged in the teaching and learning process, suggesting that the Jigsaw technique effectively facilitated high levels of interaction and improved students' communication skills. The JT served as a common ground for fostering active learning among students. Around 93% of the students affirmed that their communication skills had improved in the jigsaw classroom, aligning with similar outcomes reported in other studies by Chopra et al. (2023) and Nusrath et al. (2019). This is attributed to students' ability to collaborate during group discussions, which enabled them to listen attentively to their peers and acquire new insights through questions and discussions. Overall, the authors also noticed most students were actively participating, with good interaction and healthy competition compared to the traditional tutorial class.

In addition, approximately 80% and 83% of the experimental group's participants felt that jigsaw activities promote an in-depth understanding of the concepts and foster their academic performance in the respective order, thereby optimizing their academic performance. Moreover, it has been observed that students in the jigsaw classroom effectively mastered their subject matter by fulfilling their individual responsibilities, helping their peers understand the topics, engaging in meaningful interactions, and actively participating in the learning process. These findings are in parallel with other studies by Bhandrai et al. (2017) and Soundariya et al. (2021). Noticeably, in the present study,

more than 90% of the participants described the Jigsaw technique as an effective learning approach, and they exhibited a desire to further utilize this technique in the future. This explains why the jigsaw technique has been acknowledged as an effective way of learning, as quoted in a study by Nusrath et al. (2019).

However, the study outcomes also suggested that Jigsaw might not be equally effective for all students, as one-fifth of the participants thought that JT did not allow them to have an in-depth understanding of the topic or enabled them to improve their academic achievement. This could be because not all students are proficient in delivering content, impacting the method's success as peer teaching plays a significant role in the Jigsaw technique. Furthermore, non-cooperation from team members was identified as another factor hindering the efficiency of the approach. Similarly, some adaptation challenges were noted, suggesting a need for further refinement and support in the process of implementation.

Generally, it can be posited that the enhancement in students' written competencies can be attributed to the facilitation of cooperative interactions within small peer groups in a supportive and stress-reduced environment. Engagement in such small group dynamics facilitates diversity in both the quality and quantity of linguistic input, output, and corrective feedback, alongside amplifying face-to-face interaction opportunities. The results of this study have important implications for EFL educators and practitioners. By integrating the JT, teachers can generate a supportive and intellectually stimulating learning environment that encourages students' skill development, collaborative problem-solving, and positive social interactions. This, in turn, enables students to develop resilience and adaptability, which are crucial for academic success and lifelong learning. Overall, the study provided strong evidence for the effectiveness of the Jigsaw technique in reducing students' grammar mistakes and suggested it could be a valuable instructional strategy in writing education. Further research could address adaptation challenges and enhance JT implementation for even better outcomes.

CONCLUSION

In conclusion, the findings from the present study strongly endorse using jigsaw-based cooperative learning in the classroom to help English learners perform better in writing classes. The study assessed the effectiveness of the Jigsaw technique in improving students' grammatical accuracy by comparing pre-test and post-test scores of a control group and an experimental group. Pre-test outcomes showed no significant difference between CG and EG, which could confirm initial equivalence, while post-test results, conversely, revealed a statistically significant enhancement in the EG, hence demonstrating JT's efficacy. Furthermore, student feedback indicated high engagement and positive perceptions, though some students faced adaptation challenges. The results suggest JT is a powerful instructional strategy that not only enhances grammar learning but also fosters active participation among students. Future investigations should address adaptation challenges and explore JT's long-term effects and broader applications in university-level English courses.

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APPENDIX

QUESTIONNAIRE FOR STUDENTS

Dear all students,

I am …….. - an English lecturer at University of Transport Ho Chi Minh City. I am doing research with the tittle "***Utilizing the Jigsaw Technique to Help Students Overcome Common Grammatical Errors in Writing***". Therefore, this questionnaire aims to investigate the students' attitude towards the use of Jigsaw technique in overcoming grammatical errors. Your contribution makes a great value for my research. Your answers will be used in my research only, not for any other purposes. Thank you so much for your help.

Part I: Personal information

1. Name : …….

2. Age: …….

3. Gender: Male Female

Part II: The students' attitude towards the use of Jigsaw technique in overcoming grammatical errors in writing

Instruction: Respond to the questionnaire by ticking (✓) one of the available options:

SA: Strongly Agree A: Agree
D: Disagree SD: Strongly Disagree

		Statements	SA	A	D	SD
Student engagement in the classroom	1	During Jigsaw activities, I found myself **paying close attention** to what my classmates were explaining.				
	2	I **felt motivated** to learn my assigned topic in the Jigsaw group because I knew I would be teaching it to others.				
	3	Working in a Jigsaw group made the learning process more **interesting and engaging** for me				
	4	I'm keen to **participate** in Jigsaw activities in class.				
Encouraging cooperative learning & mutual assistance	5	This jigsaw technique **generates opportunities** for team members to share information.				
	6	This jigsaw technique helps me **to improve my communication skills.**				
Promoting learners' academic achievement	7	Taking part in the jigsaw activities enables **an in-depth understanding** of the topic.				
	8	The experience in my jigsaw class **helps improve my academic performance.**				
Overall opinion about Jigsaw	9	This method is **an effective way to reduce the grammatical errors in writing**.				
	10	I can **easily adapt** to this new technique.				

THANKS FOR YOUR HELP!